Supplemental material, Lund et al., "Augmentative and Alternative Communication Assessment for Children on the Autism Spectrum: Protocol Development and Content Validation," *LSHSS*, https://doi.org/10.1044/2024_LSHSS-23-00127

WHAT – Individual with CCN	HOW – strategy	Specific examples	WHY
All three sources			
Cognition	Dynamic Assessment	Look at how child learns, can they self-correct? What type of error patterns do they make?	Consider functioning level, intellectual potential and the long-term goals and objectives
		Try out different organizations of vocabulary	Important to assess categorization skills to inform organization of AAC display
	Standardized tests (only mentioned in articles)	Griffith's Mental Developmental Scales, Slosson Intelligence Test	
	Informal	Matching & Sorting Tasks	
Communication Needs	Collaboration	Collaborate with others (parents teachers) to determine communication needs	Initial vocabulary needs should be looked at across contexts but consider what is most motivating and most crucial in various environments
	Interview	Who do they communicate with? What language(s) are spoken? What environments are they in during the day?	Think about what is important for individual environments and what needs cross environments
	Observation	Ecological inventories: where do they need to communicate? With whom? About what?	
	Checklist	Carlson (1981)	
Current Communication skills	Collaborations	Get information from parents, teachers, others who interact with child	We look at these things to look for strengths and what can be enhanced rather than deficits
	Dynamic Assessment		Need to determine if they understand that they can affect environment with behavior
	Evaluation session trial	Clinicians trialed devices and procedures in functional tasks (e.g., requesting specific food items on dynamic display device using LAMP)	Consider use of natural gestures

WHAT – Individual with CCN	HOW – strategy	Specific examples	WHY
Current Communication Skills (continued)	Evaluation session trial	Requesting task with food items; toys	May want to initially start with a limited number of messages, especially if can't make full use of a generative system
	Individualized activity	Opportunities to elicit different communicative functions – temptations/elicitations	Be sure you have a low tech option, don't just think high tech. giving a person a device doesn't make them a competent communicator
	Criterion Referenced	Vineland; Social Networks; Pragmatics Profile of Everyday Communication Skills in Pre-School Children –Revised (PPECS-R); MacArthur Communicative Development Inventory; Receptive Expressive Emergent Language Scale (REEL)	Plan for future needs, consider environment (e.g. school)
	Standardized	ADOS – Communication and Reciprocal Social Interaction domain; CSBS communicative temptations	Observe in natural setting to see what is currently happening
	interview	Teachers, parents; Inventory of Potential Communicative Acts (Sigafoos et al, 2000) interview designed to identify prelinguistic behaviors (10 communicative functions and how child expresses them)	Collaboration – don't tell team what to do, find out what they are currently doing; provide them with information and they choose options
	observation	Unstructured free play – look for eye contact, joint attention, requests initiation - Modes of communication used - Snack time, small group instruction, toy play to look at pre-linguistic behaviors (10 communicative functions in the IPCA (e.g., request attention, request object, protest) - Turn taking, initiation/response patterns, communicative functions, modes of communication, form, content -	

WHAT – Individual with CCN	HOW – strategy	Specific examples	WHY
Current Communication Skills (continued)	Observation (continued)	- Interaction between student, peer and staff (social interaction: verbal or non-verbal behaviors produced by the focus student toward a specific person) - Record modes of communication (facial expression, gesture, vocalization, signs, speech, low tech, high tech); also whether communication is spontaneous or prompted - Communicative function (Light, 1988 categories) Observe staff interacting in familiar setting with child at school with whatever strategies	
	Checklist	The Triple C: Checklist of Communicative Competencies (Bloomberg & West, 1999)	
	Techniques & Adaptations	Closed set question, command, comment, modeling, open-ended question, parallel talk, reinforcement, sabotage, scaffolding	
Language	Collaborations	Teachers – do they use one word, two words	Explore questions that can't be answered by caregivers/informants
	Dynamic Assessment	Comprehension – does augmenting input help comprehension?	Consider age and that system has room for language growth
	Evaluation session trial	What contexts does child use system in? Can put words together in utterance? Tie in with navigation to get to vocabulary	Look at standardized receptive language scores to determine how they might inform AAC system selection
	Criterion Referenced	Griffiths Mental Developmental Scales (1984 – still in print?)	Take standard tests and then look at skills dynamically in functional contexts to see what supports comprehension
	Norm Referenced	TACL-3 PPVT,	

WHAT – Individual with CCN	HOW – strategy	Specific examples	WHY
Language (continued)	Informal assessment	Rubric that Patty D talked about – putting words together, how many communicative functions Informal tasks to assess comprehension	
	Interview	Answer yes no? how much interacting? Communicative functions – expressing feelings – spontaneous use of communication in other settings (not observed directly by the SLP, e.g., in classroom)	
	Observation	Observe systematic observations of receptive language performance in daily interactions; observe for evidence of comprehension in functional context	
Motor – Access	Evaluation session trial	Look at access in functional use	Primary deficit is not motor so screen, but don't need to spend lots of time here
	Criterion referenced	Visual motor imitation subtest of the Psychoeducational Profile	
	Informal	Assess accuracy and efficiency of access techniques to control aided systems Compete motor tasks to probe production of handshapes, orientations, positions and movements (for manual signs); Complete functional seating and positioning assessment	
	Evaluation session trial	"find it"	
Symbol Representation	Dynamic Assessment	Complete dynamic assessment (teach/test) using a receptive language task, yes/no task, visual matching task, question/answer task, or request task format	Pretend play or functional object use can inform assessment of symbolic skills

WHAT – Individual with CCN	HOW – strategy	Specific examples	WHY
Symbol Representation (continued)	Criterion referenced	Parent completes Communication and Symbolic Behavior Scale developmental profile – infant and toddler checklist	Primary consideration when selecting symbols must be appropriateness in terms of cognitive and conceptual abilities
	Extended device trial	Ultimately the answer to which type of symbol is best will only be answered by observing how readily your child learns to use symbols within a communication system	Use symbol system that is highest on the iconicity hierarchy (least restrictive symbol set) that child is able to readily recognize
	Observation	Observe tasks such as sorting to see if child understands pictures and meaning – observe use of symbols if a communication system is in place (e.g., PECS) to ensure they understand the meaning of them	Consider using pre-programmed messages as a method of rate enhancement
	Strategies and techniques to use in device trials	Modeling open ended question, sabotage (elicitation), scaffolding – using cues	
2 sources			
Behavior	Criterion Referenced	Developmental Behavior Checklist, DISCO (Diagnostic Interview for Social and Communication Disorders, ADI-R (Autism Diagnostic Interview), CARS	Clinician should consider if behaviors are communicative to reduce child's frustration during assessment
	Observations:	clinicians should observe for headbanging, rocking or other maladaptive behaviors while observing anything	
	Interview	Caregivers	
	Techniques & Adaptations	give child time to calm if they show frustration, give time to come back to activity	
Play	Collaboration	Teachers and parents	
	Dynamic assessment	Present a variety of different toys and activities to see if child engages	
	Evaluation session trial	Use play activities to elicit communication	

WHAT – Individual with CCN	HOW – strategy	Specific examples	WHY
Play (continued)	Interview	Ask about play and engagement with peers	
	observation	Observe child's play for building, creative play,	
Preferred activities and reinforcers	interview	Interview parents, caregivers, teachers about activities and items that are motivating and reinforcing for the child	Assure child has good experience with AAC techniques during the evaluation
	Checklist	Reinforcer Preference Assessment – checklist of primary, tangible and social reinforcers completed by caregivers and classroom teacher	Consider their sensory issues and preferences
1 source			
Development	Criterion Referenced	CARS, Vineland – including parent/caregiver rating form, DISCO, ADI; Adaptive Behavior inventory	
Literacy	Formal tests	Iacono and Cupples developed protocols that include phonemic awareness, word recognition, word attack and reading comprehension	
	informal	Concepts of print and alphabet knowledge (Clay, 1993)	
	Adapt formal and informal assessment tools	Phonemic awareness, letter-sound correspondence, word identification, text comprehension, developmental spelling	
Medical	Case-history/interview	Health issues, medication, dietary restrictions, tendency to fatigue	
Nonverbal communication	Collaboration	– Interview other professionals	
	Strategies	Use parallel talk to elaborate on child's non-verbal communication	
Positioning	Collaborations	Interview others about – strategies used to ensure proper positioning	
Sensory	Evaluation session trial/informal assessment	Complete functional visual and audiologcial assessment using AAC materials – make sure they can see items on display and hear output	

WHAT – Individual with CCN	HOW – strategy	Specific examples	WHY
Speech	Criterion Referenced	Verbal imitation skills were assessed using the Early Echoic Skills Assessment (Esch, 2008)	
	Informal	Language samples to provide baseline information about children's speech skills in context	
Technology skill level	Interview	Talk to parents, other professionals about use of iPad, computers for non-communication tasks (e.g., games, videos)	
	Observation	Does child attend to technology, iPad, etc.	
Therapeutic history		Find out what types of communication interventions have been used in the past	
Technology preference	Informal	Structured choice making to assess preference for one mode of communication over another (Sigafoos, 1998)	

WHAT-Device Features	HOW	Specific examples	WHY
Mentioned in three sources			
Portability	Collaboration – interview	Consider options for portability and interview about how child would carry device	Plan for portability – if client can't or doesn't carry need to plan for device to get where the person is
	observe	Observer for initiation of carrying/transporting device to different locations, prompt/cue as needed	Child has to learn to carry device from place to place – not just the size and weight
		Need to consider durability if child exhibits behaviors that may damage the system	
Mentioned in two			
Access	Evaluation session trial	Observe access (directly selection) and prompt (hand over hand) as needed to demonstrate selection method	Direct selection is usually appropriate since fine motor skills are not usually a problem
		Consider message access (direct selection, scanning, eye gaze)	Consider whether or not child views communication device as a tool or a toy
		Consider direct selection first since many with autism have good fine motor skills	
Array size	Interview	Other professionals about opinion about array size	
	Evaluation session trial/observation	Since symbols must be displayed within a constrained physical space organization is important	
High tech	Evaluation session trial/observation	To evaluate the use of the high tech system and the features (listed above) in functional task	Client and family member preference may play a role in decision-making
Navigation-organization	Collaborations	Educate stakeholders and demonstrate organization of system and interview about judgment of individual's capability	Organizational ability affects taxonomic vs semantic-syntactic vs thematic organization
		Important to consider organization	
		Fallon (2003) noted that younger children rely predominantly on a thematic organization than a taxonomic organization	

WHAT-Device Features	HOW	Specific examples	WHY
Vocabulary	Interview other professionals	Gather information on current vocabulary	
	Things to consider	Message nature and length, expandability, ability to facilitate social interaction	
Mentioned in one source			
Comparison	Evaluation session trial	Observe use of multiple devices under consideration and compare child's performance using functions and features (i.e., operational competence)	
Funding	Interview; research	Make sure you know funding source and any constraints or regulations that the funding source has	Type of funding may affect device selection
Low tech			Important to consider listener-sensitive adaptations to enhance intelligibility (clarify message) when designing low tech
~~Symbols available~~		~~Only one reference~~	
Word prediction-rate enhancement		Consider rate of communication	

WHAT-Environment	HOW	Specific examples	WHY
One source (articles only)			
Environment	Criterion Referenced - Social Networks	is an AAC assessment that addresses communicative competence as it is inevitably influenced by communication partners and environments.	
	Observation	Environmental considerations (observation of the environments person with CCN is in; contextual features of the classroom; key features is in the environment; identify environmental barriers that impeded communication; natural supports for communication	

WHAT-Partner skills	HOW	Specific examples	WHY
Mentioned in 2 sources			
Communication Supports	Interview, observation	To ask about strategies and opportunity barriers in the environment; interview partners about strategies being used; observe interaction styles typically used by facilitators	Observe don't teach at this stage
Mentioned in 1 source			
Comfort with Technology	Interview, observation, collaborations with other professionals	Consider the comfort level of the team	